

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/24/97

Date Received: 10/21/97

Project: Metro Grab, PO #M58779

Date Samples Extracted: 10/22/97

Date Extracts Analyzed: 10/23/97

**RESULTS FROM THE ANALYSIS OF THE WATER SAMPLE
FOR CHROMIUM, COPPER, NICKEL, ZINC
USING METHOD 6010**

**Samples Processed Using Method 3005A
Results Reported as mg/L (ppm)**

<u>Sample ID</u>	<u>Chromium</u>	<u>Copper</u>	<u>Nickel</u>	<u>Zinc</u>
M58779	0.22	0.13	0.15	<0.05
Method Blank	<0.05	<0.05	<0.05	<0.05

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**QUALITY ASSURANCE RESULTS
FOR TOTAL METALS BY
INDUCTIVELY COUPLED PLASMA (ICP)
(METHOD 6010)**

Laboratory Code: 710085-01 (Duplicate)

Analyte:	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Chromium	mg/L (ppm)	0.36	0.35	3	0-20
Copper	mg/L (ppm)	0.37	0.40	8	0-20
Nickel	mg/L (ppm)	0.41	0.41	0	0-20
Zinc	mg/L (ppm)	0.11	0.10	10a	0-20

Laboratory Code: 710085-01 (Matrix Spike)

Analyte:	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	Relative Percent Difference
Chromium	mg/L (ppm)	2.5	0.36	96	95	80-120	1
Copper	mg/L (ppm)	2.5	0.37	96	92	80-120	4
Nickel	mg/L (ppm)	5	0.41	103	100	80-120	3
Zinc	mg/L (ppm)	2.5	0.11	105	103	80-120	2

Laboratory Code: LCS

Analyte:	Reporting Units	Spike Level	% Recovery MS	% Recovery MSD	Acceptance Criteria	Relative Percent Difference
Chromium	mg/L (ppm)	2.5	102	95	80-120	7
Copper	mg/L (ppm)	2.5	98	97	80-120	1
Nickel	mg/L (ppm)	5	107	95	80-120	12
Zinc	mg/L (ppm)	2.5	109	95	80-120	14

a - The analyte was detected at a level less than five times the detection limit. The RPD results may not provide reliable information on the variability of the analysis.

PJ# 710099

KJ

BI


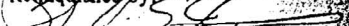
10-21-97

10.00

SAMPLE CHAIN OF CUSTODY

SITE NO. 7238	PROJECT NAME MORO GRAB	PURCHASE ORDER # M5877
SAMPLERS (signature) <i>[Signature]</i>	PROJECT LOCATION 3200 6th Ave.	
REMARKS	SAMPLE DISPOSAL INFORMATION <input checked="" type="checkbox"/> Dispose after 30 days <input checked="" type="checkbox"/> Return Samples <input checked="" type="checkbox"/> Call for Instructions	

[illegible]

SIGNATURE	PRINT NAME	COMPANY	Date	Time
Relinquished by: 	Gerald Thompson	ACH	10/21/87	9:20 am
Received by: 	Tom Russell	FB	10-21-87	9:20
Relinquished by:				
Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Jensen, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

October 24, 1997

Gerry Thompson, Project Manager
Alaskan Copper Works
628 South Hanford St.
Seattle, WA 98134


Dear Mr. Thompson:

Included are the results from the testing of material submitted on October 21, 1997 from your Metro Grab, PO #M58779 project. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

A handwritten signature in black ink, appearing to be 'Kurt Johnson', with a long horizontal flourish extending to the right.

Kurt Johnson
Chemist

Enclosures
ACU1024R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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FAX: (206) 283-5044
e-mail: fbi@isomedia.com

October 24, 1997

DUPLICATE COPY

INVOICE #97ACU1024-1

Accounts Payable
Alaskan Copper Works
628 South Hanford St.
Seattle, WA 98134

RE: Project Metro Grab, PO #M58779: Results of testing requested by
Gerry Thompson for material submitted on October 21, 1997.

1 water sample analyzed for
Chromium, Copper, Nickel, and Zinc
using Method 6010 @ \$65 per sample

\$ 65.00

Amount Due

\$ 65.00

FEDERAL TAX ID # (b) (6)